Form PTO-1390 U S DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE
(Rev. 1-98)

Attorney's Docket Number
43056-260040 (04106)

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371

U.S. Application No. (if known, see 37 CFR 1.5)
09/869528

International Application No.	International Filing Date	Priority Date Claimed
PCT/CN99/00220	29 December 1999 (29.12.1999)	30 December 1998 (30.12.1998)

Title of Invention
Discrimination System Of Cryptic Graph-Text And Producing Method Thereof

Applicant(s) for DO/EO/US
Chao Liu

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a FIRST submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371.
3. ☐ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. ☐ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
   a. ☐ is transmitted herewith (required only if not transmitted by the International Bureau).
   b. ☒ has been transmitted by the International Bureau.
   c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
   a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
   b. ☐ have been transmitted by the International Bureau.
   c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
   d. ☒ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ A translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern document(s) or information included:

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☐ A FIRST preliminary amendment.
    ☐ A SECOND or SUBSEQUENT preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information: Return Postcard

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09/869528	PCT/CN99/00220	43056-260040 (04106)

17. ☒ The following fees are submitted: CALCULATIONS PTO USE ONLY

BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(5)):

Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO $970.00

International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO $840.00

International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO..... $760.00

International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) $670.00

International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) $96.00

ENTER APPROPRIATE BASIC FEE AMOUNT =				$970	
Surcharge of $130.00 for furnishing the oath or declaration later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				$	
Claims	Number Filed	Number Extra	Rate		
Total claims	10 - 20 =	0	x 18.00	$0	
Independent Claims	2 - 3 =	0	x 78.00	$0	
Multiple Dependent Claims (if applicable)			+ 260.00	$	
TOTAL OF ABOVE CALCULATIONS =				$970	
Reduction of 1/2 for filing by small entity, if applicable. Applicant claims small entity status. -				$485	
SUBTOTAL =				$485	
Processing fee of $130.00 for furnishing the English translation later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				$	
TOTAL NATIONAL FEE =				$485	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). $40.00 per property +				$	
TOTAL FEES ENCLOSED =				$485	
				Amount to be refunded:	$
				charged:	$

a. ☒ A check in the amount of $485 to cover the above fees is enclosed.

b. ☐ Please charge my Deposit Account No. 11-0855 in the amount of $_____ to cover the above fees. A duplicate copy of this sheet is enclosed.

c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment, to Deposit Account No. 11-0855. A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

Roger T. Frost, Reg. No. 22,176

SEND ALL CORRESPONDENCE TO:
Roger T. Frost
Kilpatrick Stockton, LLP
Suite 2800
1100 Peachtree Street
Atlanta, Georgia 30309-4530
Telephone – 404-815-6500

DISCRIMINATION SYSTEM OF CRYPTIC GRAPH-TEXT AND PRODUCING METHOD THEREOF

TECHNICAL FIELD OF THE INVENTION

The present invention relates to a system and method for the prevention of counterfeiting graphs and texts, and more particularly relates to a discrimination system of cryptic graphs-texts and a producing method thereof.

BACKGROUND OF THE INVENTION

In the commodity circulation, the institution of effective supervisory system and the questioning of the genuineness of the commodity are grave concerned by all countries. Practically, consumers are often confused by a large variety of imitation articles. The interests of most consumers and the manufacturers are infringed seriously, and consumers cannot find an effective way for distinguishing between genuine and imitation. They may even hesitate to buy, and the reputation of the manufacturers is injured unjustly. Due to the forcible action of the imitation articles, the market for famous products even shrinks seriously and their producers are forced to change the packaging and to make advertisements again and again, and expenses increase accordingly. On the other hand, the new imitation articles themselves are changed very soon. Often, the producers of the imitation articles have not been charged and they often get exorbitant profits. The related government agencies spend a lot of financial

and very often they are alleviating symptoms only and do not effect a permanent cure. Of recent years, several measures such as so-called visional 3D labels or laser labels have been used, to resist the imitations and those labels are imitated again. People are looking for better anti-counterfeiting labels.

So far, the prior art for anti-counterfeiting patterns have used the combination of parallel streaky lines of different angle forming the cryptic graph-text patterns only. With small difference of different angles the pattern is revealed. By the use of parallel streaky gratings as a reader and placing the grating on the cryptic pattern with the relative correlation of two groups of streaks, the original pattern can also be seen. But the correlation is easy to be recognized; thus the counterfeiting pattern is easy to be imitated.

SUMMARY OF THE INVENTION

The present invention puts forward a discrimination system of a cryptic graph-text pattern and the producing method thereof. By the use of the 4D (4 parameters) technique it is possible to produce multiple graph-text combination in one copy, which increases the number of levels for anti-counterfeit and is more difficult to be decoded and imitated. This system can be connected to a compatible computer system for supervision and discrimination. Thus the pattern can also be read visually or by computer.

The technical solution of the invention is described as follows: The cryptic graph-text discrimination system includes a printed sheet and digital readers. On the surface of the printed sheet, there is high-density dot group of the complete cryptic document that is composed by plural cryptic documents and each of them is treated by a decomposing and digitizing technique. The sheet is made of transparent, translucent or non-transparent

material. The high-density dot groups can also be printed on both sides of the sheet and in that case the sheet is made of transparent or translucent material.

The surface of the reader, as a whole or divided by several parts, is covered by different kind of omni-directional lens arrays and the surface of the vein is uneven or is smooth and many miniaturized lenses with specific focal lengths are distributed. All lenses are made of convex lenses or holes or both of them. The lenses are arranged in accordance with the pattern of the high-density dot groups of the individual cryptic graph-text document that is one of the digitized and decomposed cryptic graph-text documents.

The arrangement of the miniaturized lenses on the omni directional lens array is in grid form, in step shape, in wavelike pattern, or of special combination.

The digitized reader is made of transparent or translucent material such as plastic or colloid and can be a rigid card or a flexible card, and some other cryptic patterns are also fixed on the surface near the edges.

The above-mentioned printed sheet can be fixed on licenses, certificates, sealing strips, credit cards, different magnetic cards, computer software, hard discs, LDs, stamps, money notes, bills, receipts, birth certificates, contracts, permits, documents for clearing customs, packages of products, and can also be fixed on porcelain, metal, glass, molded plastic articles, wooden articles and dress material.

The procedure of producing the cryptic graph-text discrimination system is as follows:

a. Enciphering/digitizing the visible and cryptic graph-text documents step by step by the use of randomly generated enciphering system. Enciphering parameters of the multivariate function are assigned in each step, and then the parameters are deleted before the next step is commencing.

b. Then decompose the graph-text documents by an operational decomposing digitizing system and create individual cryptic patterns corresponding to different digital reader functions, and also create the complete cryptic document of the cryptic graph-text function.

c. The individual cryptic patterns and the complete cryptic document are printed on the surfaces of the reader sheets and the printed sheet, respectively, and form the high-density dot group on each surface. It is also possible to superimpose the decomposed cryptic documents. Thus, the dot groups are overlapped, the colors and patterns are mixed together. The sizes, shapes, direction and spacing of the dots are all different, thus the compressed cryptic document is unable to be separated again and is also unable to be scanned completely. Hence the crypto guard is attained. The informational capacity and the contrast of the cryptic document are also very good.

The advantages of the present invention over the prior art are:

1. The way of discrimination is intuitive, simple, speedy and easy to be spread. It can be used in different environments and with different light sources.

2. The technique comprises of many different kinds of crypto guard and is difficult to imitate. As the content of one cryptic graph-text document is corresponding to several digital readers, one can read

corresponding documents on the same cryptic document sheet with different readers. Thus the number of levels of the cryptic anti-counterfeiting pattern (document) is increased and the composed cryptic pattern is unable to be decomposed. The imitator is unable to separate any layer of the composed cryptic pattern or the digital readers. The crypto guard stands more safely against the imitators .

3. The results are kept safe, durable, and true. If the cryptic patterns and digital readers are timely changed, the results can be kept more safe. That is more useful for famous products.

4. The results can be read visually or by computer.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a schematic diagram of the composition of the cryptic graph-text pattern discrimination system.

Figure 2 is a schematic diagram of grid shape miniaturized lenses of the digital reader.

Figure 3 is a schematic diagram of step-shaped miniaturized lenses of the digital reader.

Figure 4 is a schematic diagram of wavelike arranged miniaturized lenses of the digital reader.

Figure 5 is a schematic diagram of specially arranged miniaturized lenses of the digital reader.

Figure 6 is a schematic diagram of transparent holes of the digital reader.

Figure 7 is a flow diagram of the producing procedure of the cryptic graph-text pattern discrimination system.

PREFERRED EMBODIMENTS OF THE INVENTION

The present invention will be described more detail by reference to the appended drawings.

As shown in figure 1, the cryptic graph-text pattern discrimination system comprises printed sheet 1 and the matched digital reader 2. The complete cryptic document comprising the digitized individual cryptic graph-text patterns are printed on the surface of the cryptic document sheet. The appearance of the complete cryptic document is just the high-density dot group 3. The material of the printed sheet can be transparent, translucent or non-transparent.

When the matched digital reader 2 is covered on the surface of printed sheet 1, one can look through the lenses and see the original document on the printed sheet 1. If the visual angle is rotating around the axis from 0 to 360 degrees, the pattern read is alternating from visible to invisible and from light to heavy. When different readers 2 are covered on the surface of the same document sheet different documents are read.

If the material of the printed sheet 1 is transparent or translucent, the digital dot group 3 can be fixed on both side of the printed sheet 1 by double side pressing or rolling. Due to the refraction and reflection of transparent light, one can see some cryptic patterns on sheet 1 and when a matched reader 2 is covered on it one can see some other cryptic patterns.

As shown in Figures 2 through 6, the surface of the reader 2, as a whole or divided into several parts, are covered by different kinds of omni-directional lens arrays and the surface of the vein is uneven or smooth and many miniaturized lenses with specific focal lengths are distributed on it. All arrays are fixed with convex lenses or holes or both of them. The

lenses/holes are arranged in accordance with the high-density dot group 3 of one of the individual cryptic patterns and which is digitized beforehand. The lenses can be in grid arrangement or in step-shaped or in wavelike pattern or with special combination. As shown in figure 5, the shapes and the sizes of individual lens and the pole coordination and the polar angle of the arrangement, the spacing, and the focal lengths of the lenses can all be adjusted when needed. The omni-directional lens array used is different from those of parallel cylindrical grating. The material, transparency, refractive index, and the composition of colors can all be changed and create specific combinations. The control of the parameters of the cryptic anti-counterfeiting products is highly arbitrary and unique, and the reverse engineering of the parameters is impossible. It is easy to define the parameters and produce the products. The decomposition, imitation and reproduction are very difficult. Even the pattern of the copy reproduced looks very similar to the real one, but the small difference of the parameters will cause the changes of the focal length and the focus, thus the pattern would be blurred and the contrast become worse and part of the document would be missing when read the cryptic document through a digital reader 2.

Digital readers 2 are made of transparent or translucent material such as plastic or colloid and the plastic material may be PET, PVC, PC, PE, ABS and PP. In order to prevent the reproduction of the digital readers 2, some cryptic patterns can be fixed on the surface near the edge and another digital reader can read these patterns.

The appearance of the digital reader is like a credit card or any other form. It can be a rigid card or a flexible one. For a rigid card, it is easy to be carried and checked, and a flexible card conforms to curve surfaces.

As shown in Figure 7, the producing method of the system for discrimination of cryptic graph-text document is: the system includes the printed sheet 1 and the matched digital reader 2. Enciphering/digitizing the visible and cryptic graph-text documents step by step by the use of randomly generated enciphering system, results in the digital graph-text document. Enciphering parameters of the multivariate function are assigned in each step and then the parameters are deleted before the next step is commencing for the sake of keeping secrecy. Then, decompose the graph-text documents by the operational decomposing digitizing system and create different individual cryptic patterns for the corresponding digital reader functions and the complete cryptic document for the cryptic document function, respectively. Then, fix the documents on the surfaces of the digital reader 2 and printed sheet 1, respectively, and form the high-density dot groups by the use of high-precision optical output instruments. Then superimpose the decomposed cryptic graph-text documents so that the multi-dot groups are overlapped. The colors and patterns are mixed together. The sizes, shapes, directions and spacing of the dots are all different. The cryptic document is thus created with numerous parameters.

The relationship of above-mentioned individual cryptic patterns and the complete cryptic document can be expressed as follows:

the enciphering system is $M = f(a) \times f(b) \times \ldots \times f(n)$

Again suppose $M(a, b, \ldots\ldots n) = f(a, b, \ldots\ldots n) \times N(a, b, \ldots\ldots n)$

$= Ma + Mb \ldots\ldots Mn$

$= fa(Na) + fb(Nb) + \ldots\ldots + fn(Nn)$

Mn is the individual cryptic pattern of the decomposed digital reader.

Nn is the N^{th} individual cryptic document of the complete cryptic document.

$$fa(Na) + fb(Nb) + \ldots\ldots + fn(Nn) = f(a, b, \ldots\ldots n) \times N(a, b, \ldots\ldots n)$$

That is: The complete cryptic document is the sum of the individual cryptic document.

The method of making a printed sheet with the cryptic graph-text document and a digital reader with the cryptic pattern on the surfaces is as follows:

Suppose that, the 1st individual cryptic graph-text document is A

the 2nd individual cryptic graph-text document is B

the Nth individual cryptic graph-text document is N

and N can approach infinity.

With reference to figure 7, digitizing the cryptic graph-text document A, B and the visible graph-text document is as follows: Firstly, input the operational digitizing system of document: enciphering and executing the digitizing process. Secondly, enter the operational decomposing digitizing system and sort the graph-text documents, resulting in the individual pattern of the digital reader A' and B' and the complete cryptic graph-text document of the cryptic graph-text documents. By the use of high-precision optical output instruments, the individual cryptic pattern of the digital reader A' is fixed on the surface of the digital reader A', the individual cryptic pattern of the digital reader B' is fixed on the surface of the digital reader B'; and the complete cryptic graph-text document of the cryptic graph-text documents is fixed on the surface of the printed sheet. If the digital reader A' is covered on the right position and the right orientation of the printed sheet, the individual document A is revealed and if the digital

reader B' is covered on the right position and the right orientation of the printed sheet, the individual document B is revealed.

The same cryptic document or two different cryptic documents can be fixed on both sides of one printed sheet.

The technique of fixing the cryptic document onto the surface of the document sheet is by printing, silk-screen printing, electronic printer, gilding press, heat pressing, biting in, photo etching, hologram, stamping, thermoplastic technique, transcription, and so on.

In order to enhance the concealment of the anti-counterfeiting products, more than one cryptic document can be placed on the surface of a printed sheet and the same number of readers are also used to read the corresponding documents on that printed sheet.

The anti-counterfeiting products are suitable to many applications such as ID cards, permits for admission, different passes and licenses, passports, credit cards, intelligent cards, different magnetic cards, computer software, hard discs, LDs, stamps, money notes, bills, checks, receipts, birth certificates, contracts, permits, documents for clearing customs, and packages of famous products that need anti-counterfeiting measure.

A method of making printed sheet with cryptic graph-text documents, and digital readers on both sides is as follows:

As described above and is shown in figure 7, the material of the printed sheet is transparent or translucent and cryptic documents are fixed on both sides of the sheet. The technique of fixing the cryptic documents on both sides of the printed sheet is by rolling or by pressing. Due to the refraction and the reflecting of the transparent light, a special pattern can be

seen on the printed sheet itself, suggesting that the printed sheet is already carrying the cryptic documents. If the corresponding digital reader is covered on the printed sheet, a certain document is revealed. This product can be applied as the sealing strips for package, sealing labels for bottles. and the envelopes of different credentials.

One can read the revealed document either with the naked eye or by the automatic mode discrimination system of the computer. For example: store the special digitized discrimination data of the digital reader in the computer beforehand, then input the cryptic document from the printed sheet to the computer, then let the computer compare the effective digital code collected with the data stored at each corresponding point, by the use of a scanner (use visible light, ultra violet, infrared, or X-ray), point-by-point automatically. If the comparison result is in agreement with what is preset, the result is accepted and the cryptic document would be displayed on the computer screen.

This method can also be used to discriminate the complete cryptic document comprising several individual cryptic documents with same number of special digitized discrimination data groups individually and automatically. If each of the individual comparison result is in agree with the specific cryptic pattern, the complete results are accepted. By this way, the classification of security is achieved.

Any changes and modifications based on the present invention are within the spirit and the scope of the protection of the present invention.

CLAIMS

1. Discrimination system of cryptic graph-text including printed sheet and the digital reader matched, characterized in that:

the surface of the said printed sheet is fixed with a complete cryptic graph-text document, which comprises several individual cryptic graph-text documents and presents itself as a digital dot group with very high density and each of said individual cryptic graph-text documents is digitized and decomposed;

said printed sheet is made of transparent, translucent or non-transparent material;

said printed sheet can also be fixed with the above mentioned complete cryptic graph-text documents presented as the high density dot groups on both side and said printed sheet is made of the transparent or translucent material;

the surface of the said digital reader is fixed with a complete omni directional lens array or with several arrays on separated parts of the surface; the surface of the vein is uneven or is smooth and many miniaturized lenses with specific focal lengths are distributed on it; and

all arrays are fixed with convex lenses or holes or both of them; the lenses are arranged in accordance with the pattern of the high density dot groups that are formed by one of the individual cryptic graph-text pattern digitized and decomposed.

2. The discrimination system of cryptic graph-text according to Claim 1, characterized in that: the lenses of omni-

directional lens arrays are arranged in grid pattern or in step-shaped or in wavelike pattern or with special combination.

3. The discrimination system of cryptic graph-text according to Claim 1, characterized in that: the digital reader is also fixed with some cryptic patterns on the surface near the edges.

4. The discrimination system of cryptic graph-text according to Claim 1, characterized in that: said digital reader is made of transparent or translucent material.

5. The discrimination system of cryptic graph-text according to Claim 4, characterized in that: said transparent or translucent material of said digital reader is plastic or colloid.

6. The discrimination system of cryptic graph-text according to Claim 1, characterized in that: said digital reader is of rigid card or flexible card.

7. The discrimination system of cryptic graph-text according to Claim 1, characterized in that: said printed sheet can be fixed to the licenses, certificates, sealing strips, credit cards, different magnetic cards, intelligent cards, computer software, hard discs, LD, stamps, money notes, bills, receipts, birth certificates, contracts, permits, documents for clearing customs, packages of products, or on

the surfaces of porcelain, metal, died plastic articles, wooden articles and dress material.

8. A manufacturing method of the discrimination system of the cryptic graph-text, comprising the following procedures:

a. enciphering/digitizing the visible and cryptic graph-text documents step by step by the use of randomly generated enciphering system resulting in the digital graph-text documents; enciphering parameters of the multivariate function are assigned in each step and are deleted before the next step is commenced;

b. decomposing the graph-text documents by operational decomposing digitizing system and creating several cryptic patterns and complete cryptic document of the corresponding digital reader functions and cryptic document function, respectively; and

c. fixing the cryptic patterns and the complete cryptic document onto the surfaces of the digital readers and the printed sheet, respectively, and forming the high density dot groups by the use of the high precision optical output instruments.

9. The manufacturing method of the discrimination system of the cryptic graph-text according to Claim 8, characterized in that said procedure of fixing the said cryptic patterns onto the surfaces of said digital readers and the printed sheet is by printing, silk-screen printing, electronic printer, gilding press, heat pressing,

biting in, photo etching, hologram, stamping, thermoplastic technique or transcription.

10. The manufacturing method of the discrimination system of the cryptic graph-text according to Claim 8, characterized in that the technique of fixing said complete cryptic document onto the surface(s) of said digital readers and the printed sheet is by printing, double side pressing or rolling.

ABSTRACT

The discrimination system of the cryptic graph-text document and manufacturing method thereof is to digitize and decompose the cryptic document and fix them onto the surfaces of the digital reader and printed sheet, which present themselves as the cryptic documents. An array of numerous miniaturized lenses with specific focal lengths is distributed on the surface of the reader. When the printed sheet is covered with a specific digital reader at a specific location, the corresponding document is revealed and presents as the original document and alternating the darkness of the pattern from heavy to light and from invisible to visible gradually while changing the visual angle. Several digital readers are matched to one printed sheet, resulting in different cryptic patterns accordingly. The discrimination system is intuitive, simple and speedy, and is difficult to imitate. This technique is good for making licenses, bills, money notes, stamps, packages of goods, and all others that require anti-counterfeiting marks attached.

FIG 1

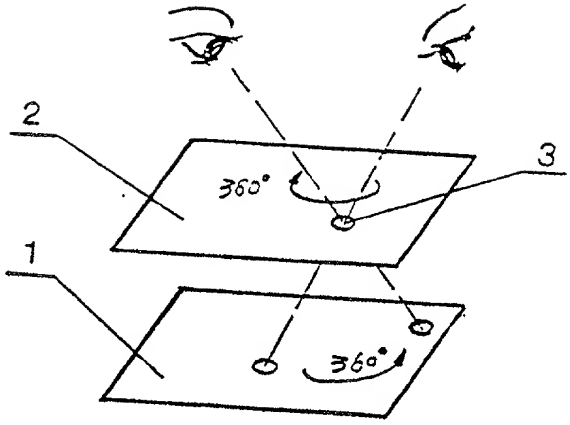


FIG 2

FIG 3

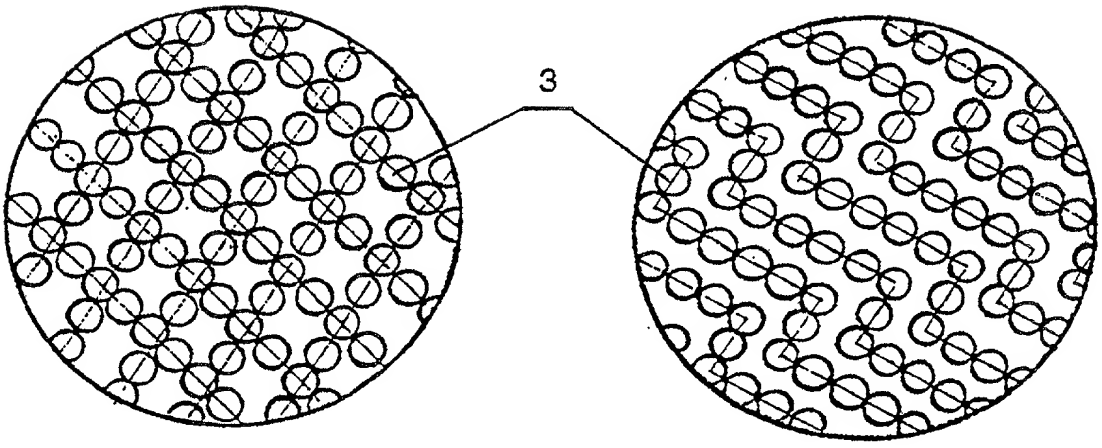


FIG 4

FIG 5

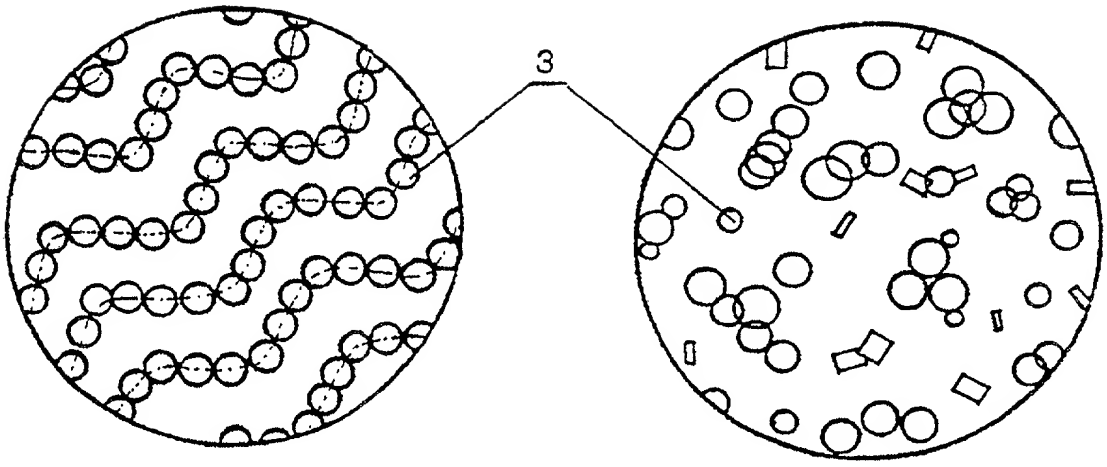


FIG 6

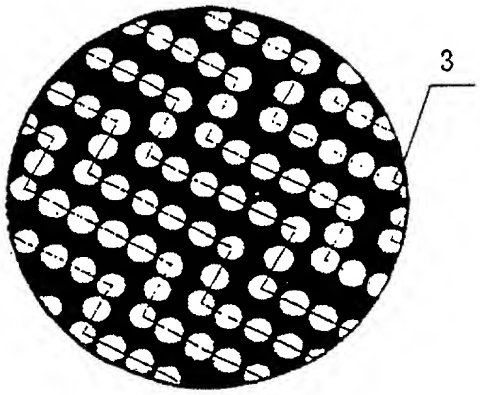
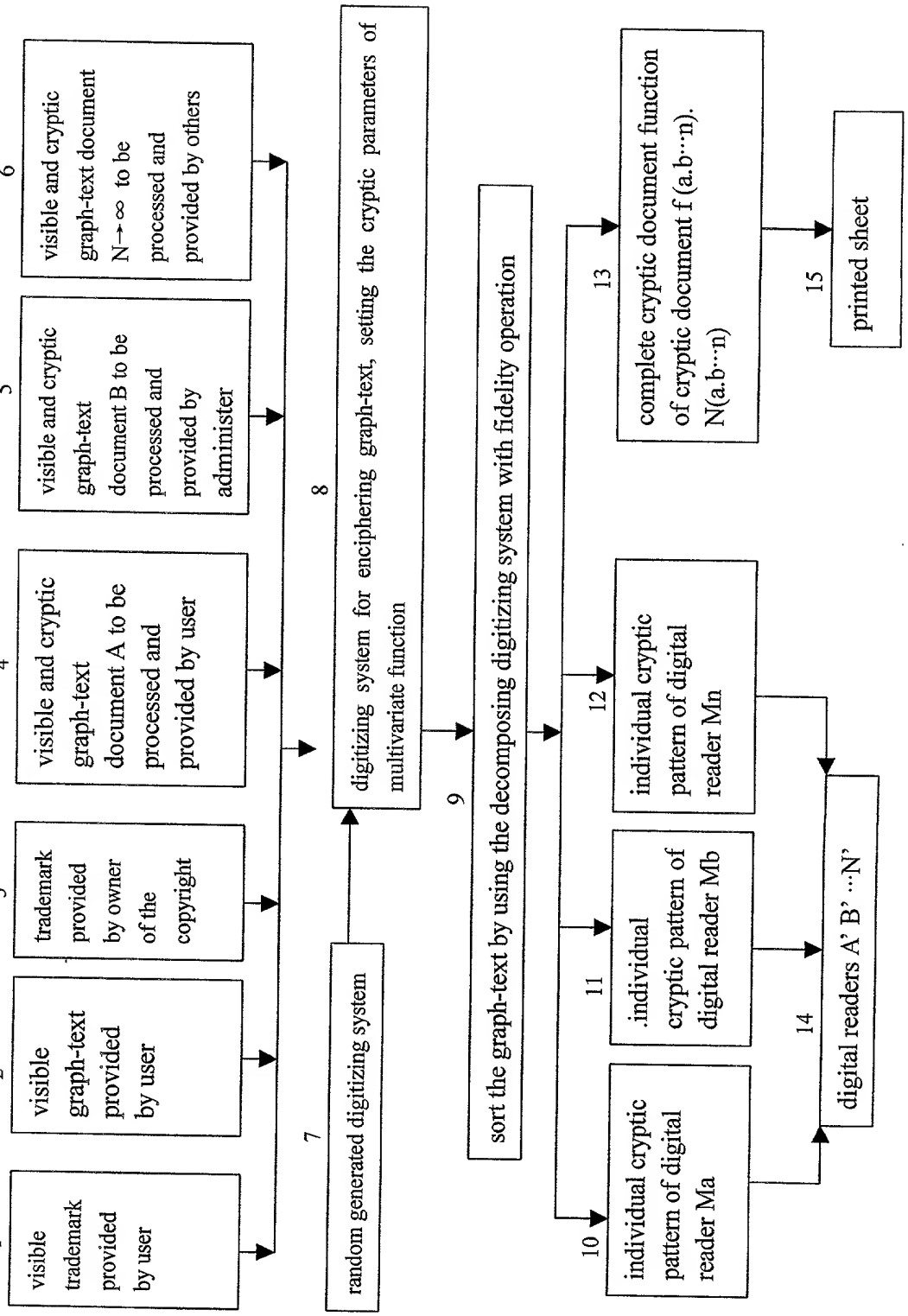


FIG 7


1
visible trademark provided by user
2
visible graph-text provided by user
3
trademark provided by owner of the copyright
4
visible and cryptic graph-text document A to be processed and provided by user
5
visible and cryptic graph-text document B to be processed and provided by administer
6
visible and cryptic graph-text document N→∞ to be processed and provided by others
7
random generated digitizing system
8
digitizing system for enciphering graph-text, setting the cryptic parameters of multivariate function
9
sort the graph-text by using the decomposing digitizing system with fidelity operation
10
individual cryptic pattern of digital reader Ma
11
.individual cryptic pattern of digital reader Mb
12
individual cryptic pattern of digital reader Mn
13
complete cryptic document function of cryptic document f (a.b…n). N(a.b…n)
14
digital readers A' B' …N'
15
printed sheet

Declaration and Power of Attorney For Patent Application
專利申請聲明及委託書
Chinese Language Declaration
中文聲明

作為下述發明者，我在此宣告：

As a below named inventor, I hereby declare that:

Chao LIU

我的住址、郵局地址和國籍均列在我名下，

My residence, post office address and citizenship are as stated below next to my name,

Rm 1-701, Building 2 of Dongguan Road, Chaoyang District, Beijing 100029, P.R. China

☐ 我相信我是首創的、第一個和唯一的發明者(如只列出一人姓名)或是首創的、首位共同發明者(如列出數人姓名)。我提出作為專利申請權利要求的題目如下

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

Discrimination system of cryptic graph-text and producing method thereof

如不在下面小方格中打叉則須將說明書附此：

the specification of which is attached hereto unless the following box is checked:

☐ 以美國申請號碼或PCT國際申請號碼 _____
立案于 _____
修正于(如適用) _____

☐ was filed on _____
as United States Application Number or PCT International Application Number
_____ and was amended on
_____ (if applicable).

我在此聲明我已閱畢并理解上述說明書的內容，包括上述任何修正案所修正的權利要求。

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

按照聯邦法規第三十七節第一．五六條，我有責任提供支持專利權的實質性資料。

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37 Code of Federal Regulations, § 1.56.

Chinese Language Declaration

我申請享受按照美國法規第三十五節第一百一十九條列出的以下任何外國專利申請書或發明者證書的外國優先權，並確認下列具有優先權申請前立案日期的、任何外國專利申請書或發明者證書。

I hereby claim foreign priority under Title 35, United States Code, § 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed.

			是否要求優先權	
98126380.1	China	December 30, 1998	☒	☐
(號碼) (Number)	(國名) (Country)	(申請日/月/年) (Day/Month/Year Filed)	是 Yes	否 No
			☐	☐
(號碼) (Number)	(國名) (Country)	(申請日/月/年) (Day/Month/Year Filed)	是 Yes	否 No
			☐	☐
(號碼) (Number)	(國名) (Country)	(申請日/月/年) (Day/Month/Year Filed)	是 Yes	否 No

我申請享受按照美國法規第三十五節一百二十條列出的以下任何美國申請書的利益，如果此申請書中提出的每項權利要求的題目未按美國法規第三十五節第一百二十條第一段的要求在以前的美國申請書中披露，則我有責任按照聯邦法規第三十七節第一．五六(甲)條提供支持專利權的實質性資料，這一法規條文生效于以前申請的立案日期之後，但在美國或 PCT 國際申請立案日期之前。

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

(申請順序號碼) (Application Serial No.)	(申請日期) (Filing Date)	(狀況) (已獲專利權、申請中、取消)	(Status) (patented, pending, abandoned)
(申請順序號碼) (Application Serial No.)	(申請日期) (Filing Date)	(狀況) (已獲專利權、申請中、取消)	(Status) (patented, pending, abandoned)

我在此聲明根據我所知而作的所有聲明都真實無誤，所有有關資料和信息的聲明也真實無誤；我還知道，按照美國法規第十八節第一千零一項，任何蓄意偽造的聲明都將受到罰款或監禁，或同時受到兩種懲罰。這類蓄意偽造的聲明將危及此申請書或任何已頒發專利的效力。

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Chinese Language Declaration

委託書：
以列名發明者的身份，我在此指定下列律師和/或代理人執行此申請並從事與專利商標公署有關的所有業務(列出姓名和註冊號碼)：

POWER OF ATTORNEY:As a named inventor, I hereby appoint the following attorney(s) and /or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.(list name and registration number)

通訊地址

Send Correspondence to:
Roger T. Frost
Kilpatrick Stockton, LLP
Suite 2800
1100 Peachtree Street,
Atlanta, Georgia 30309-4530

直接電話(姓名及電話號碼)

Direct Telephone Calls to: (name and telephone number)
Roger T. Frost - 404-815-6500

第一個或唯一的發明者全名 刘超	Full name of sole or first inventor 1-00 Chao LIU
發明者簽字 刘超 日期 2001年6月7日	Inventor's signature Date Chao Liu June 30, 2001
地址 中国北京市朝阳区东环路2号楼1门701室 100029	Residence 1-701 Building 2 of Donghuan Road, Chaoyuan District, Beijing 100029, R.P. China
國籍 中国	Citizenship Chinese CNX
郵局地址 同上.	Post Office Address 1-701 Building of Donghuan Road, Chaoyuan District, Beijing 100029, R.P. China
第二個共同發明者全名(如有)	Full name of second joint inventor, if any
第二個發明者簽字 日期	Second Inventor's signature Date
住址	Residence
國籍	Citizenship
郵局地址	Post Office Address

(第三個和其他共同發明者需提供同樣資料和簽字。) (Supply similar information and signature for third and subsequent joint inventors.)